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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/092,382 | 03/05/2002 | Derek I. Finch | 58937/131 | 8455 |
| 27433 | 7590 | 12/19/2003 | EXAMINER | |
| FOLEY & LARDNER 321 NORTH CLARK STREET SUITE 2800 CHICAGO, IL 60610-4764 | | | DUONG, THO V | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3743 | |

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

10/092,382

Applicant(s)

FINCH ET AL.

Examiner

Tho v Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 3,8-11,14,18,21 and 26-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2,4-7,12,13,15-17,19-20 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

Claims 3,8-11,14,18,21 and 26-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group and species, there being no allowable generic or linking claim. Election of group I and species of figure 7 was made **without** traverse in Paper No. 7.

Drawings

Figure 29 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,2,4-7,12-13,15-17,19-20 and 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted element is: a means of sealing the openings of the connector such as an insert plate (315) or a blank disk (517) as a various embodiment of the means to sealingly enable or disable flow into channels between the plates. As regarding claim 1, the outwardly directed flange formed integrally from a wall of the tubular wall does not sealingly enable or disable flow into channels between the plates.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chevallier (US 5,988,270) in view of Proctor et al. (US 4,614,231). Chevallier discloses (figure 1 and column 3, lines 55-57) a heat exchanger (10) comprising a plurality of heat transfer plates (14) stacked together such that a plurality of fluid channels are provided there between the plates (12); at least one connecting grid (18,20,22) separating the plurality of heat transfer plates into upper group of heat transfer plate and lower group of heat transfer plate (14), and at least one fluid connector (28) in fluid communication with a fluid channel via the connecting grid (18,20,22); and the connector (28) comprising a tubular body having an end to form a fluid tight connection with the connecting grid. Chevallier does not disclose an outwardly directed flange formed integrally from a wall of the tubular body to form a fluid tight connection with the connecting grid. As disclosed by Chevallier, the connection between the connector (28) and the heat exchanger is complicated with steps of brazing and clamping. Attention is now directed to reference to Proctor. Proctor teaches a much simplify connection between a fluid connector and a heat exchanger. Proctor discloses (figures 1-2 and column 2, line 65-column 3, line 15) a plate heat exchanger that has a fluid connector (9) comprising a tubular body (9a) having an outwardly directed flange (16) formed integrally from a wall of the tubular body to form a fluid tight connection with the heat exchanger and this connection enables the fluid connector (9) to rotate

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at any angle with respect to the heat exchanger while steps of brazing and clamping are eliminated. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Proctor's teaching in the Chevallier's heat exchanger to form a fluidly tight connection between a fluid connector and a heat exchanger and to enable the fluid connector to rotate at any angle with respect to the heat exchanger while steps of brazing and clamping are eliminated.

Conclusion

The non-application of art against claims 1,2,4-7,12-13,15-17,19-20, and 22-24 should not be construed as an indication that the claims contain allowable subject matter.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Frazier et al. (US 5,413,169) discloses automobile evaporator manifold having a fluid connector joined with a plate heat exchanger.

Neveux (US 4,094,358) discloses a liquid cooling apparatus having a fluid connector with flange extending outwardly from a wall of the connector.

Rasso Jr, et al. (US 5,355,947) discloses a heat exchanger having flow control insert.

Suzumura Jeiji (JP 2225954) discloses a plate heat exchanger that has a connection portion between two plates.

Ohashi et al. (JP 9061084) discloses an inlet and outlet pipe for stacked type heat exchanger.

Fouts et al. (US 5,325,915) discloses a modular cooler having a plurality of units.

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

TD

TD

December 3, 2003

A handwritten signature in black ink, appearing to read 'Tho Duong', with a long horizontal line extending from the end of the signature.

Tho Duong

Patent Examiner.